

**Abstract of the Disclosure**

The present invention represents a new approach to data analysis for multivariate classification, particularly as used in medical diagnostics. The invention is in part an intuitive decision making tool for rapid classification of "objects" (e.g., cell, tissue or tumor samples) from evaluation of many simultaneous "variables" (e.g., quantitative gene expression profiles). The data analysis methods of the invention provide the end user with a simplified and robust output for diagnostic classification of objects based on identifying and evaluating multiple variables of predetermined diagnostic relevance. The raw data generated by analysis of the variables is transformed by application or appropriate algorithms to scaleless rank differentials between the variables. The rank orders of variables are used to classify tissues based on readily observable user interfaces, such as a graphical (e.g., visual) user interface or an auditory user interface.